

[CHEMICAL MECHANICAL POLISHING APPARATUS, PROFILE CONTROL SYSTEM AND CONDITIONING METHOD THEREOF]

Abstract

A profile control system for controlling a profile of a polishing pad, adapted in a chemical mechanical polishing (CMP) apparatus comprises: a polishing pad, a polishing table, a polishing head, and a conditioner, wherein the polishing pad has a transparent region. The control system includes at least one illuminant, a detector and a processor. The illuminant is in the polishing table and corresponds to the transparent region of the polishing pad. The detector is over the polishing pad to detect the light from the illuminant passing through the transparent region of the polishing pad. The processor is adapted to determine the thickness of the polishing pad according to the light detected by the detector and transmits a processing signal to the conditioner for adjusting processing recipes of the conditioner. Therefore, it is possible to obtain a polishing pad of a desired profile and the variations of the uniformity of the wafers can be reduced.